

Total No. of Printed Pages—3

**2 SEM TDC BOT M 2**

**2 0 1 2**

( May )

**BOTANY**

( Major )

Course : 201

**( Plant Pathology and Bryophytes )**

Full Marks : 48

Pass Marks : 19

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Write the correct answers of the following : 1×2=2

(i) Plant diseases which spread widely but occur periodically are called endemic / epidemic / sporadic / None of the above.

(ii) The archegonium of Riccia is a spherical / flask-shaped / funnel-shaped / conical structure.

(b) Fill in the blanks : 1×2=2

(i) Ergot of rye is caused by —.

(ii) Spores of Sphagnum are dispersed by means of —.

2. Write short notes on the following :  $2\frac{1}{2}\times 4=10$

(a) Spore producing organs of Polytrichum

(b) Peristome of moss

(c) Susceptibility and immunity of a plant towards pathogen

(d) Significant differences between localised and systematic diseases

3. Answer either [(a) and (b)] or [(c) and (d)] :

(a) What do you mean by host-parasite relationship? Discuss briefly about the post-penetration stages caused by plant pathogens. 1+4

(b) Give an account of the classification of Bryophyta. 5

(c) Describe briefly the biological control of plant disease and its ecological importance. 4+1

(d) Write a short account on the ecological and economic importance of Sphagnum. 2+3

4. Discuss the symptoms, disease cycle and control measures of the following diseases mentioning the names of their causal organisms (any two) :  $(2+1+2+1) \times 2 = 12$

(a) Late blight of potato

(b) Loose smut of wheat

(c) Red rot of sugarcane

(d) Citrus canker

5. Give a comparative account of the gametophytes of Riccia, Marchantia and Polytrichum with neat labelled diagrams.  $9+3$

Or

Describe with sketches the life history of Anthoceros and indicate its evolutionary importance.  $3+7+2$

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**2 0 1 3**

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**BOTANY**

( Major )

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**( Plant Pathology and Bryophytes )**

Full Marks : 48

Pass Marks : 19

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Write the correct answer of the following : 1×2=2

(i) An antagonistic condition in which there is a suppression of pathogenic microorganism is called exploitation / competition / antibiosis / None of the above.

(ii) The sporophyte of *Marchantia* is composed of only foot / only seta / only capsule / All of the above.

( 2 )

(b) Fill in the blanks of the following :  $1 \times 2 = 2$

(i) The establishment of the pathogen in the host tissue after penetration is called —.

(ii) *Sphagnum* is commonly called '— moss'.

2. Answer the following :  $2\frac{1}{2} \times 4 = 10$

(a) Why is systemic disease more harmful than localized disease?

(b) Distinguish between sporadic and endemic diseases.

(c) Write on gametophyte of *Riccia*.

(d) Write on distribution of bryophytes in India.

3. Answer either (a) and (b) or (c) and (d) of the following :

(a) What are toxins? Classify them and mention their role in plant pathology.

1+2+2

(b) "The sporophyte of *Riccia* is the simplest among the bryophytes." Justify the statement.

5

(c) Write an account on different types of chemical for controlling plant diseases.

What is 'quarantine regulation'? 4+1

- (d) Comment upon the features of special interest of the sporophyte of *Anthoceros*.  
Write its systematic position. 4+1
4. Mention the name of the causal organism, symptoms, disease cycle and control measures of the following (any two) :  
(1+1+2+2)×2=12
- (a) Ergot of rye  
(b) Rust of wheat  
(c) Grey blight of tea  
(d) Mosaic disease of tobacco
5. Give a comparative account of the gametophytes of *Sphagnum* and *Polytrichum* with neat labelled diagrams. Also mention the evolutionary characteristics observed in the sporophyte of *Polytrichum*. 6+4+2

Or

Write briefly the spore dispersal mechanisms in bryophytes giving more emphasis on the members of moss group you have studied. 6+6

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**2 SEM TDC BOT M 1**

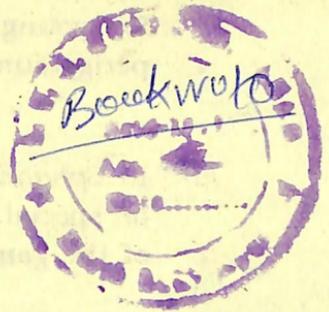
**2014**

( May )

**BOTANY**

( Major )

Course : 201



**( Plant Pathology and Bryophytes )**

Full Marks : 48

Pass Marks : 19

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. Answer as directed : 1×4=4

(a) The invasion of the host tissue by the living microorganism is called —.

(Fill up the blank)

(b) Write the name of the causal organism of the disease 'Grey blight of tea'.

(c) The structure which is developed as a result of enlargement of the basal portion of the archegonium of

( 2 )

Bryophyta to form a protective envelope for young embryo is called calyptra/perigynium/integument/rostrum.

(Choose the correct option)

- (d) In *Sphagnum*, the sex organs are borne on special short branches near the apex of the gametophyte.

(Express in one word)

2. Write short notes on the following :  $2\frac{1}{2} \times 4 = 10$

- (a) Localised and systemic infections with one example of each type  
(b) Post-harvest management  
(c) Rhizoids of bryophytes  
(d) Columella of moss and its function

3. Answer either (a) and (b) or (c) and (d) of the following :

- (a) Name various enzymes responsible for degradation of cellular components of the host and discuss their roles in pathogenesis.

2+3=5

- (b) Give an account of the capsular structure of *Marchantia* and comment on its mode of spore dispersal.

3+2=5

(c) What do you mean by disease management? Write briefly various regulatory methods of plant disease management.  $1+4=5$

(d) Write explanatory notes on the following :  $2\frac{1}{2}+2\frac{1}{2}=5$

(i) Economic importance of *Polytrichum*

(ii) Ecological significance of *Sphagnum*

4. Mention the symptoms, name of the causal organism, disease cycle and control measures of the following diseases (any two) :  $(1+1+2+2)\times 2=12$

(a) Late blight of potato

(b) Loose smut of wheat

(c) Red rot of sugarcane

(d) Citrus canker

5. Describe briefly the progressive evolution of the sporophytes of bryophytes that you have studied. Give diagram.  $8+4=12$

Or

Describe with sketches the life history of *Anthoceros* and indicate its evolutionary significance.  $3+7+2=12$

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**2 SEM TDC BOT M 1**

**2015**

( May )

**BOTANY**

( Major )

Course : 201

**( Plant Pathology and Bryophytes )**

*Full Marks : 48*

*Pass Marks : 19/14*

*Time : 2 hours*

*The figures in the margin indicate full marks  
for the questions*

1. (a) Answer as directed : 1×4=4

(i) The plant diseases which spread widely but occur periodically are called —.

(Fill up the blank)

(ii) Write the name of the causal organism of the disease 'late blight of potato'.

(iii) The sporophyte of *Riccia* is composed of only foot / only seta / only capsule / All of the above.

(Choose the correct option)

(iv) In Moss, a special ring-like layer of epidermal cells, lying around the capsule at the base of the operculum.

(Express in one word)

(b) Write short notes on the following :

$2\frac{1}{2} \times 4 = 10$

(i) Susceptibility and immunity of a plant towards pathogen

(ii) Symptoms of localised and systemic diseases

(iii) Distribution of Bryophytes in India

(iv) Gametophytes of *Marchantia*

2. Answer either (a) and (b) or (c) and (d) of the following :

(a) What do you mean by host-parasite relationship? Discuss briefly about the post-penetration stages caused by plant pathogens.

$1 + 4 = 5$

(b) "The sporophyte of *Riccia* is the simplest among the Bryophytes." Justify the statement.

5

(c) Write briefly various physical and cultural methods of plant disease management.

$2\frac{1}{2} + 2\frac{1}{2} = 5$

(d) Draw and describe the sporophyte of *Anthoceros* and state its evolutionary importance in Bryophyte.  $4+1=5$

3. Mention the symptoms, name of the causal organism, disease cycle and control measures of the following diseases (any two) :  
 $(1+1+2+2)\times 2=12$

(a) Ergot of rye

(b) Rust of wheat

(c) Grey blight of tea

(d) Mosaic disease of tobacco

4. Write briefly the spore dispersal mechanisms in Bryophytes giving more emphasis on the members of Moss group you have studied.  
 $6+6=12$

Or

Describe with sketches the life history of *Polytrichum* and indicate its evolutionary importance.  
 $3+7+2=12$

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**2 0 1 6**

( May )

**BOTANY**

( Major )

Course : 201

**( Plant Pathology and Bryophytes )**

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Answer the following as directed :  $1 \times 4 = 4$

(i) Any visible deviation on the host plant from the normal in structure and function is called \_\_\_\_.

(Fill in the blank)

(ii) Multiseptate conidia are found in *Claviceps* / *Collectotrichum* / *Pestalotia* / *Phytophthora*.

(Choose the correct option)

(iii) The disc of antheridiophore of *Marchantia* is commonly \_\_\_\_ lobed.

(Fill in the blank)

(iv) \_\_\_\_\_ is commonly called 'bog moss'.

(Fill in the blank)

(b) Write short notes on the following :

$2\frac{1}{2} \times 4 = 10$

(i) Hypoplasia and hypertrophy

(ii) Endemic and epidemic diseases

(iii) Columella of *Anthoceros* and its evolutionary significance

(iv) Apophysis of *Polytrichum* and its function

2. Answer either (a) and (b) or (c) and (d) of the following :

(a) What are enzymes? Name the various enzymes responsible for degradation of cellular components of the hosts and their roles in pathogenesis.

$1 + 4 = 5$

(b) Give an account of the classification of Bryophyta.

5

(c) Describe briefly the various regulatory and cultural methods of plant disease management.

$2\frac{1}{2} + 2\frac{1}{2} = 5$

(d) Draw and describe the sporophyte of *Marchantia* and state its mechanism of spore dispersal.

$3 + 2 = 5$

( 3 )

3. Mention the symptoms, name of the causal organism, disease cycle and control measures of the following diseases (any two) :

(1+1+2+2)×2=12

- (a) Late blight of potato
- (b) Loose smut of wheat
- (c) Red rot of sugarcane
- (d) Citrus canker

4. Give a comparative account of the gametophytes of *Riccia*, *Marchantia* and *Polytrichum* with neat labelled diagrams.

9+3=12

Or

Describe briefly the gametophyte of *Sphagnum* and state its ecological and economic importances.

7+3+2=12

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Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Answer the following as directed : 1×4=4

(i) Development of sporophyte directly from the gametophyte tissue is called apogamy/apospory/synogamy/parthenogenesis.

(Choose the correct option)

(ii) The antherozoids of *Riccia* are having uniflagellate/ biflagellate/ triflagellate/multiflagellate.

(Choose the correct option)

(iii) The time-interval between infection of a plant and the first appearance of disease symptoms is known as \_\_\_\_\_ period. (Fill in the blank)

(iv) Grey blight of tea is caused by the causal organism \_\_\_\_\_. (Fill in the blank)

(b) Answer/Write notes on the following :

$2\frac{1}{2} \times 4 = 10$

(i) What do you mean by localized and systemic infection?

(ii) Distinguish between susceptibility and immunity.

(iii) Ecological significance of *Sphagnum*

(iv) Gemma cup and its function

2. Answer either (a) and (b) or (c) and (d) of the following :

(a) Write briefly on various biological methods of plant disease management.

What is 'quarantine' regulation?  $3+2=5$

(b) Write about the economic importance of bryophytes. 5

(c) "The sporophyte of *Riccia* is the simplest among the bryophytes." Justify the statement. 5

(d) Describe various methods by which pathogens are disseminated. 5

3. Mention the symptoms, name of the causal organism, disease cycle and control measures of the following diseases (any two) :  
(1+1+2+2)×2=12

- (a) Ergot of rye
- (b) Rust of wheat
- (c) Grey blight of tea
- (d) Mosaic disease of tobacco

4. Describe briefly the progressive evolution of the sporophytes of bryophytes that you have studied. Give diagram. 8+4=12

Or

What do you mean by alternation of generations? Explain it with reference to the life history of *Polytrichum*. How are the spores dispersed in the plant? 2+8+2=12.

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